# QC ABSTRACT

**NAME OF WORK:** "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura."

| SL NO | Item Of Work | Name of Test | Frequency of Test/Quantity | Executed Quantity | Number of Tests Required | Number of Tests Conducted |
|---|---|---|---|---|---|---|
| | | **Materials** | | | | |
| 1 | Cement | Fineness by dry sieving | One Test | | 1 | 1 |
| | | Finess by Air permeablity method | One Test | | 1 | 1 |
| | | Density | One Test | | 1 | 1 |
| | | Standard Consistency | One Test | | 1 | 1 |
| | | Initial Setting time | One Test | | 1 | 1 |
| | | Final Setting time | One Test | | 1 | 1 |
| | | Soundness (Le Chatelier's Method) | One Test | | 1 | 1 |
| | | Compressive Strength | One Test | | 1 | 1 |
| 2 | Coarse aggregate(40 mm down size) | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Flakiness Index | One Test | | 1 | 1 |
| | | Elongation Index | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Bulk Density(Loose) | One Test | | 1 | 1 |
| | | Bulk Density(Compacted) | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| 3 | Coarse aggregate(20 mm down size) | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Flakiness Index | One Test | | 1 | 1 |
| | | Elongation Index | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Bulk Density(Loose) | One Test | | 1 | 1 |
| | | Bulk Density(Compacted) | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| | | Aggregate crushing Value | One Test | | 1 | 1 |
| | | Aggregate Impact Value | One Test | | 1 | 1 |
| 4 | Fine aggregate | SIEVE ANALYSIS | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| | | Specific Gravity | One Test | | 1 | 1 |
| | | Material finer than 75 micron | One Test | | 1 | 1 |
| 5 | KERB | Core Compressive strength | One Test | | 1 | 1 |
| | | Corrected Cylinder Compressive strength | One Test | | 1 | 1 |
| | | Equivalent Cube Compressive strength | One Test | | 1 | 1 |
| 6 | Precast (100mm) | Core Compressive Strength | One Test | | 1 | 1 |
| | | Corrected Cylinder Compressive Strength | One Test | | 1 | 1 |
| | | Equivalent Cube Compressive Strength | One Test | | 1 | 1 |
| 7 | PCC(M15) | Compressive Strength(7days and 28days) | 2 set /1-5 cum | 13.08 | 4 | 4 |
| 8 | WMM | Sieve Analysis | One Test | | 1 | 1 |
| | | Impact Value | One Test | | 1 | 1 |
| | | Flakiness Index | One Test | | 1 | 1 |
| | | Elongation Index | One Test | | 1 | 1 |

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|---|---|---|---|---|---|---|
| 9 | Paver Block | Compressive Strength | One Test | | 1 | 1 |
| | | Water Absorption | One Test | | 1 | 1 |
| 10 | Chain Link Fencing | Average Thickness | One Test | | 1 | 1 |
| | | Dia of line wire | One Test | | 1 | 1 |
| | | Mesh size | One Test | | 1 | 1 |
| | | Nominal dia of mesh wire | One Test | | 1 | 1 |
| | | Bend Test | One Test | | 1 | 1 |
| 11 | M.S Block Pipe | Yeild Stress | One Test | | 1 | 1 |
| | | Tensile Strength | One Test | | 1 | 1 |
| | | Elongation Percentage | One Test | | 1 | 1 |
| 12 | M.S. Rectangular pole | Weight/Meter | One Test | | 1 | 1 |
| | | Yeild stress | One Test | | 1 | 1 |
| | | Tensile Strength | One Test | | 1 | 1 |
| | | Elongation Percentage | One Test | | 1 | 1 |
| | | Bend Test | One Test | | 1 | 1 |
| 13 | Cement Concrete Designer Tiles | Water Absorption | One Test | | 1 | 1 |
| | | Wet Transverse Strength | One Test | | 1 | 1 |

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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 20-11-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 17-11-20 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 (Part 1,2 3,4,5, 6,11):1988<br>IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4<br>IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5<br>IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5<br>IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6 |
| **Date of test** | : | 18-11-20 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | Fineness by dry sieving (%) | 1.87 | – |
| 2 | Finess by Air permeablity method ($m^2$/kg,Min) | 348.6 | 225$m^2$/kg, Min |
| 3 | Density (gm/cc) | 3.12 | – |
| 4 | Standard Consistency (%) | 28.5% | Not specified |
| 5 | Initial Setting time | 135 minutes | Not less than 30 minutes |
| 6 | Final Setting time | 245 minutes | Not more than 600 minutes |
| 7 | Soundness (Le Chatelier's Method) | 1.5mm | Not more than 10 mm |

* The results obtained are satisfactory as per standard requirements.

**Note:**

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

Any correction in the report will make this report invalid

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Samples will be disposed after 30 days from the date of issue of test certificate

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Project Division
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**R RUDRAPRASAD**
Authorized Signatory
**Technical Manager**



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## TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

**Date: 16-12-20**

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 17-11-20 |
| **Sample Type** | : | Birla Super 53grade |
| **Reference to BIS codes** | : | IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,<br>IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5<br>IS 4031 Part 6, Determination of Compressive Strength, Clause 6 |
| **Date of test** | : | 18-11-20 |
| **Environmental Conditions during test** | : | Temperature: 26°C<br>Humidity: 72% |

**Compressive Strength**

| Sl.No. | Physical properties | Results | Requirement as per IS 12269: 2013 |
|---|---|---|---|
| 1 | 3 Days | 28.5N/mm$^2$ | Not less than 27 N/mm$^2$ |
| 2 | 7 Days | 39.0N/mm$^2$ | Not less than 37 N/mm$^2$ |
| 3 | 28 Days | 58.5N/mm$^2$ | Not less than 53 N/mm$^2$ |

* The results obtained are satisfactory as per standard requirements.

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 20-11-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample condition** | : | Satisfactory |
| **Date of Receipt** | : | 17-11-20 |
| **Sample Type** | : | 40mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 17-11-20 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:**

**Total weight taken : 15000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 80 mm | 0 | 0 | 0.0 | 100 | 100 |
| 2 | 40 mm | 215 | 215 | 1.4 | 98.6 | 90-100 |
| 3 | 20 mm | 7455 | 7670 | 51.1 | 48.9 | 30-70 |
| 4 | 10 mm | 4266 | 11936 | 79.6 | 20.4 | 10-35 |
| 5 | 4.75 mm | 2844 | 14780 | 98.5 | 1.5 | 0-5 |
| 6 | Pan | 220 | 15000 | 100.0 | 0 | --- |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2021-01-06-17** **Date: 20-11-20**

**PHYSICAL PROPERTIES**

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 11.9 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 12.3 | |
| 3 | Specific Gravity | 2.64 | _ |
| 4 | Bulk Density(Loose) (Kg/l) | 1.41 | _ |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.47 | _ |
| 6 | Water Absorption(%) | 0.23 | _ |

* The results obtained are satisfactory as per standard requirements.

**Note:**

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## TEST REPORT ON COARSE AGGREGATES

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 19-11-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 17-11-20 |
| **Sample Type/ Size** | : | 20mm down size coarse aggregate |
| **Reference to BIS codes** | : | IS: 383:2016 (Specification for Coarse and fine Aggregates )<br>IS: 2386 :1963(Part - 1,3,4) RA2011<br>IS 2386 Part 1: Particle Size and Shape<br>IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption<br>IS 2386 Part 4: Mechanical Properties |
| **Date of test** | : | 17-11-20 |

**SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:**

**Total weight taken : 5000 grams**

| Sample No. | Sieve No. | Weight Retained in gms | Cumulative Weight Retained in gms | % Cumulative Weight Retained | % Passing | Required as per IS 383:2016 |
|---|---|---|---|---|---|---|
| 1 | 40 mm | 0 | 0 | 0 | 100 | 100 |
| 2 | 20 mm | 225 | 225 | 4.5 | 95.5 | 90-100 |
| 3 | 10 mm | 2845 | 3070 | 61.4 | 38.6 | 25-55 |
| 4 | 4.75 mm | 1745 | 4815 | 96.3 | 3.7 | 0-10 |
| 5 | Pan | 185 | 5000 | 100 | 0 | – |



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## TEST REPORT ON COARSE AGGREGATES

**Lab ID** : **CP-2021-01-06-17** **Date: 19-11-20**

### PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS:383-2016 |
|---|---|---|---|
| 1 | Flakiness Index(%) | 13.2 | Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate |
| 2 | Elongation Index(%) | 10.1 | |
| 3 | Specific Gravity | 2.68 | – |
| 4 | Bulk Density(Loose) (Kg/l) | 1.43 | – |
| 5 | Bulk Density(Compacted) (Kg/l) | 1.49 | – |
| 6 | Water Absorption(%) | 0.23 | – |
| 7 | Aggregate crushing Value(%) | 22.9 | Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface. |
| 8 | Aggregate Impact Value(%) | 23.7 | 30% for Aggregates to be used in concrete for wearing Surface,<br>45% for Aggregates to be used in concrete other than for wearing Surface. |

* The results obtained are satisfactory as per standard requirements.

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**Technical Manager**

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# TEST REPORT OF FINE AGGREGATE

**Lab ID** : **CP-2021-01-06-17**

**Date: 19-11-20**

## PHYSICAL PROPERTIES

| Sl.no | Tests | Result | Requirements as per IS 383:2016 |
|---|---|---|---|
| 1 | Water Absorption(%) | 1.5 | – |
| 2 | Specific Gravity | 2.59 | – |
| 3 | Material finer than 75 micron(%) | 6.9 | Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10% |

* The results obtained are satisfactory as per standard requirements.

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**Technical Manager**

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# TEST REPORT OF CEMENT CONCRETE KERB STONE

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 12-12-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 08-12-20 |
| **Sample Type /Size** | : | CC Kerb Stone/ 450*165*400mm |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete |
| **Date of test** | : | 08/12/2020 |

| Sl. No. | Identification Mark | Diameter of the core | Height of the core | Weight of the core | Area | Failure Load | Core Compressive strength | Corrected Cylinder Compressive strength | Equivalent Cube Compressive strength |
|---|---|---|---|---|---|---|---|---|---|
| | | (mm) | (mm) | Kg | (Sq.mm) | (KN) | (N/mm2 ) | (N/mm2 ) | (N/mm2 ) |
| 1 | A | 100.01 | 165.51 | 2.864 | 7854 | 142.1 | 18.1 | 18.1 | 22.6 |
| 2 | B | 100.03 | 165.49 | 2.793 | 7857 | 145.2 | 18.5 | 18.5 | 23.1 |
| 3 | C | 100.01 | 165.50 | 2.815 | 7854 | 145.1 | 18.5 | 18.5 | 23.1 |

* The results obtained are satisfactory as per standard requirements.

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Date: 05/12/2020**

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 30-11-20 |
| **Customer ID** | : | PCC |
| **Sample Type /Size** | : | 150X150X150 mm |
| **Sample grade/Age** | : | M15 / 7 Days Compressive Strength |
| **Reference to BIS codes** | : | IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5 |
| **Date of test** | : | 05/12/2020 |

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PCC | M15 | 28/11/2020 | 05/12/2020 | 151.42 X 150.31 X 150.57 | 22760 | **8.943** | 290.2 | 12.7 | 12.5 |
| 2 | PCC | M15 | 28/11/2020 | 05/12/2020 | 151.69 X 149.95 X 150.04 | 22747 | **8.677** | 285.6 | 12.6 | |
| 3 | PCC | M15 | 28/11/2020 | 05/12/2020 | 149.19 X 149.58 X 151.32 | 22317 | **8.305** | 269.2 | 12.1 | |

* The results obtained are satisfactory as per standard requirements.

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**R RUDRAPRASAD**
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****End of Report****

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# TEST REPORT OF CEMENT CONCRETE CUBES

**Lab ID** : **CP-2021-01-06-17** **Date: 26/12/2020**

**Customer** : Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.

**Address** : Project Sub Division, BBMP, Bangalore.

**Project Name** : "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura."

**Agency** : Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45

**Customer's Reference** : EE(Project)/Ynk Zone/WO/117/2020-21

**Source of Sample** : Sample supplied by Agency

**Sample Condition** : Satisfactory

**Date of Receipt** : 30-11-20

**Customer ID** : PCC

**Sample Type /Size** : 150X150X150 mm

**Sample grade/Age** : M15 / 28 Days Compressive Strength

**Reference to BIS codes** : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

**Date of test** : 26/12/2020

| Sl. No. | Identification Mark | Grade of concrete | Date of Casting | Date of Testing | Dimension of the Specimen (mm) | Cross sectional area (Sq.mm) | Weight of the sample (kg) | Failure Load (KN) | Compressive strength ($N/mm^2$) | Average Compressive Strength ($N/mm^2$) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | PCC | M15 | 28/11/2020 | 26/12/2020 | 149.64 X 150.89 X 149.44 | 22580 | **8.325** | 396.6 | 17.6 | 17.4 |
| 2 | PCC | M15 | 28/11/2020 | 26/12/2020 | 150.50 X 150.90 X 149.72 | 22710 | **8.304** | 388.5 | 17.1 | |
| 3 | PCC | M15 | 28/11/2020 | 26/12/2020 | 151.16 X 150.30 X 150.30 | 22718 | **8.570** | 399.3 | 17.6 | |

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## CEMENT CONCRETE FLOORING TILES

**Lab ID** : **CP-2021-01-06-17** **Date: 21-12-20**
**Customer** : Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.

**Address** : Project Sub Division, BBMP, Bangalore.
**Project Name** : "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura."
**Agency** : Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45

**Customer Reference** : EE(Project)/Ynk Zone/WO/117/2020-21
**Source of Sample** : Sample supplied by Agency
**Sample Condition** : Satisfactory
**Date of Receipt** : 15-12-20
**Sample Type** : Pre-Polished Designer Cement Concrete Tiles
**Reference to BIS codes** : IS 1237:2012
**Date of test** : 15-12-20

**1. Water Absorption**

| Sl.No. | Measured Dimension (mm) | | | Water Absorption | Average | Requirement as per IS:1237-2012 |
|---|---|---|---|---|---|---|
| | L | B | T | (%) | (%) | |
| 1 | 400 | 399 | 25.09 | 2.530 | 2.21 | The average percentage of water absorption shall not exceed 10. |
| 2 | 401 | 401 | 25.05 | 1.920 | | |
| 3 | 400 | 401 | 25.11 | 2.170 | | |
| 4 | 400 | 399 | 25.06 | 2.060 | | |
| 5 | 399 | 400 | 25.17 | 1.800 | | |
| 6 | 400 | 400 | 25.13 | 2.760 | | |

**2.Wet Transverse Strength**

| Sl.No. | Measured Dimension (mm) | | | Wet Transverse Strength | Average | Requirement as per IS:1237-2012 |
|---|---|---|---|---|---|---|
| | L | B | T | ($N/mm^2$) | ($N/mm^2$) | |
| 1 | 401 | 401 | 25.02 | 7.83 | 7.8 | The average wet transverse strength shall not be less than $3N/mm^2$. |
| 2 | 401 | 401 | 25.04 | 8.16 | | |
| 3 | 400 | 399 | 25.06 | 7.51 | | |
| 4 | 399 | 401 | 25.01 | 7.88 | | |
| 5 | 400 | 400 | 25.05 | 8.25 | | |
| 6 | 401 | 399 | 25.03 | 7.29 | | |

* The results obtained are satisfactory as per standard requirements.

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**Technical Manager**


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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

## CEMENT CONCRETE PRECAST CONCRETE BLOCKS FOR PAVING

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 15-12-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 10-12-20 |
| **Sample Type/ Size** | : | Precast concrete blocks for paving |
| **Reference to BIS codes** | : | IS 15658:2006 |
| **Date of test** | : | 10-12-20 |

**1.Compressive Strength**

| Sl.No. | Dimension (mm) | | | Compressive Strength | Average |
|---|---|---|---|---|---|
| | L | B | T | ($N/mm^2$) | ($N/mm^2$) |
| 1 | 197.22 | 159.88 | 75.99 | 32.5 | 33.1 |
| 2 | 198.48 | 159.64 | 75.25 | 33.8 | |
| 3 | 199.54 | 159.54 | 75.48 | 32.5 | |
| 4 | 197.68 | 159.22 | 75.55 | 33.5 | |
| 5 | 198.11 | 159.87 | 75.32 | 32.8 | |
| 6 | 198.18 | 160.02 | 75.11 | 33.4 | |
| 7 | 198.45 | 158.99 | 75.98 | 33.2 | |
| 8 | 197.22 | 159.22 | 75.12 | 32.8 | |

**2. Water Absorption**

| Sl.No. | Wet Weight | Dry weight | Thickness | Water Absorption (%) | Average (%) |
|---|---|---|---|---|---|
| 1 | 4.987 | 4.828 | 75.85 | 3.29 | 3.64 |
| 2 | 4.898 | 4.721 | 75.22 | 3.75 | |
| 3 | 4.988 | 4.802 | 75.44 | 3.87 | |

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BBMP, Bangalore - 92

# TEST RESULTES FOR MS BLOCK PIPE

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 07-12-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Agency** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Project Name** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 05-12-20 |
| **Type of Sample** | : | M.S Block Pipe |
| **Reference to BIS codes** | : | IS:1608-2005(RA 2011), IS 1599-2012. |
| **Date of test** | : | 05-12-20 |

**TESTS RESULTS FOR MS BLOCK PIPE 38MM DIA, 14 GAUGE**

| Sl. No | Description | Result | Required as per as IS Code 2062: 2011 | Remarks |
|---|---|---|---|---|
| 1 | Yeild Stress (N/mm2) | 299 | 250N/mm$^2$ | Satisfactory |
| 2 | Tensile Strength (N/mm2) | 509 | 410N/mm$^2$ | Satisfactory |
| 3 | Elongation Percentage (%) | 24 | Min 23% | Satisfactory |

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# TEST RESULTES FOR MS RECTANGULAR POLE

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 03-12-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Sourse of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 01-12-20 |
| **Type of Sample** | : | M.S Rectangular Pole(65X65X6)mm |
| **Reference to BIS codes** | : | IS:1608-2005(RA 2011), IS 1599-2012. |
| **Date of test** | : | 01-12-20 |

**TESTS RESULTS FOR M.S RECTANGULAR POLES MADE OUT OF 2 EQUAL ANGLES OF 65 X 65 X 6 MM WELDED TOGETHER**

| SL.NO | Description | Result | Required as per IS Code 2062:2011 | Remarks |
|---|---|---|---|---|
| 1 | Weight/Meter (Kg /m) | 5.81 | 5.8 Kg/m | Satisfactory |
| 2 | Yeild stress (N/mm2) | 278 | 250N/mm$^2$ | Satisfactory |
| 3 | Tensile Strength (N/mm2) | 485 | 410N/mm$^2$ | Satisfactory |
| 4 | Elongation Percentage (%) | 23.5 | Min23% | Satisfactory |
| 5 | Bend Test | Satisfactory | Should not Crack or fracture | Satisfactory |

* The results obtained are satisfactory as per standard requirements.

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M : 9972924526 | Tel : +91 80 23444801 | e : rechandra630@yahoo.co.in, civilproexperts@gmail.com

# TEST RESULTS FOR CHAIN LINK FENCING

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 05-12-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer's Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Sourse of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 03-12-20 |
| **Type of Sample** | : | Chain Link Fencing |
| **Reference to BIS codes** | : | IS 2062:2011 |
| **Date of test** | : | 03-12-20 |

| **TESTS RESULT FOR WIRE MESH** | | |
|---|---|---|
| **SL.NO** | **Description** | **Result** |
| 1 | **Average Thickness in mm** | 4.04 |
| 2 | **Dia of linewire in mm** | 3.14 |
| 3 | **Mesh size in mm** | 50.01 |
| 4 | **Nominaldia of meshwire in mm** | 2.52 |
| 5 | **Bend Test** | Satisfactory |

* The results obtained are satisfactory as per standard requirements.

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BBMP, Bangalore - 92

## TEST RESULTS OF GRADATION FOR WMM

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 23-11-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 21-11-20 |
| **Type of Mix** | : | WMM ( Wet Mix Macadam) |
| **Date of Test** | : | 21-11-20 |
| **Oven Dry Weight** | : | 11000 Grams |

| IS Sieve Size(mm) | Weight Retained (gm) | Cumulative Weight Retained (gm) | % Cumulative Weight Retained | % Passing | Spec.I.Vide Table 400.13 MORTH Specification |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0.0 | 100.0 | 100 |
| 45 | 315 | 315 | 2.9 | 97.1 | 95-100 |
| 22.4 | 2259 | 2574 | 23.4 | 76.6 | 60-80 |
| 11.2 | 2179 | 4753 | 43.2 | 56.8 | 40-60 |
| 4.75 | 2251 | 7004 | 63.7 | 36.3 | 25-40 |
| 2.36 | 1621 | 8625 | 78.4 | 21.6 | 15-30 |
| 0.6 | 623 | 9248 | 84.1 | 15.9 | 8-22 |
| 0.075 | 1338 | 10586 | 96.2 | 3.8 | 0-5 |

* The results obtained are satisfactory as per standard requirements.

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# TEST REPORT OF AGGEGRATE IMPACT VALUE
## IS: 2386 Part IV

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 23-11-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 21-11-20 |
| **Type of Mix** | : | Coarse Aggregate for WMM ( Wet Mix Macadam) |
| **Date of Test** | : | 21-11-20 |

| Sl.No | Particulars of observations | Index | TEST 1 | TEST 2 |
|---|---|---|---|---|
| 1 | Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve) | A | 300.2 | 300.2 |
| 2 | Weight of fraction passing 2.36mm sieve After giving 15 blows | B | 73.9 | 74.0 |
| 3 | weight of fraction retained 2.36mm sieve After giving 15 blows | C | 225.9 | 225.8 |
| 4 | Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made. | A-(B+C) | 0.4 | 0.4 |
| 5 | Aggregate impact value | (B/A)*100 | 24.6 | 24.7 |
| 6 | Aggregate impact value ( Mean of two tests) | Pecentage | 24.6 | |

* The results obtained are satisfactory as per standard requirements.

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## DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007 )

| | | |
|---|---|---|
| **Lab ID** | : | **CP-2021-01-06-17** **Date: 23-11-20** |
| **Customer** | : | Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore. |
| **Address** | : | Project Sub Division, BBMP, Bangalore. |
| **Project Name** | : | "Improvements to Parks Amrutha Nagara in Ward No.07 Byatarayanapura." |
| **Agency** | : | Sri. K Lakshmi Narayana Reddy, #688, 1st Floor, Vyalikaval Society, Near Chaitanaya Techno School, Veeranapalya, Bangalore-45 |
| **Customer Reference** | : | EE(Project)/Ynk Zone/WO/117/2020-21 |
| **Source of Sample** | : | Sample supplied by Agency |
| **Sample Condition** | : | Satisfactory |
| **Date of Receipt** | : | 21-11-20 |
| **Type of Mix** | : | Coarse Aggregate for WMM ( Wet Mix Macadam) |
| **Date of Test** | : | 21-11-20 |

**Result:**

| Index | Percentage of Flakiness and Elongation Index | Secified limits as per MORTH specification table 400-12 |
|---|---|---|
| Flakiness Index | 12.8% | Combined Flakiness & Elongation Index for WMM is Maximum 35% |
| Elongation Index | 12.5% | |
| Combined Flakiness and Elongation Index for WMM | 25.3% | |

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